



**Building a Sustainable and Prosperous  
Bioscience Sector in Ontario:**

**The Ontario Bioscience Industry Strategic  
Implementation Plan**

**June 2011**

**A project of the Ontario Bioscience Industry  
Organization (OBIO™)**





### **About OBIO™**

The Ontario Bioscience Industry Organization (OBIO™) is a private sector, membership-based organization that is Ontario's leading advocate for the life science sector. OBIO™ is engaged in advocacy to enable the successful development and commercialization in Ontario of life science technology through investment, strategic alliances, stakeholder engagement and industry promotion. Our goal is to build a leading bioscience cluster in Ontario to deliver innovative products / services to a global market.

### **About OBEST™**

The Ontario Bioscience Economic Strategy Team (OBEST™) was developed by OBIO™ following consultation with leaders of Ontario's bioscience companies who provided the impetus for developing a province-wide strategic vision to support the growth and viability of Ontario's bioscience industry. OBEST™ includes all stakeholders in the Ontario bioscience community who want to create the conditions for sustainable growth of Ontario's bioscience industry.

Over the past several months, OBEST™ has engaged >200 senior representatives from major stakeholder groups across Ontario's life-sciences sector. The 6-month strategic planning process has resulted in defined priorities and a plan for robust growth and commercial viability of the province's bioscience industry.

## Executive Summary

**Why do we need a strategy?** Ontario taxpayers currently spend over \$44 billion annually on healthcare and \$22 billion for education. The 5% projected rate of increase in (2011/12), healthcare spending is greater than the projected rate of increase for Ontario's GDP, 2.4% (2011). The education system and academic research funding costs also continue to rise. Ontario is a leading global jurisdiction for innovation indicators, in terms of R&D spending to GDP ratio, and percentage of individuals with post-secondary training. However, Ontarians do not reap the benefits of an innovation economy due to the underdevelopment of the biosciences industry sector. Our investments in research, novel commercial technologies, highly-qualified individuals, and smaller start-up corporations are, for the most part, lost to foreign markets. The commercial products and services developed from our innovations are then bought back by Ontarians (in the form of novel therapeutics, diagnostics, and devices) at considerable mark-up. The increased costs are not only a growing burden for tax payers, but more importantly, we as Ontarians have not benefited from the economic prosperity (jobs and wealth creation) that would result from a strong and sustainable domestic biosciences sector.

**What is industry's primary concern?** STABILITY! The biosciences sector is a global industry, but long-term sustainability and growth for Ontario is dependant on our ability to link our research investment with experienced individuals and retain the commercial development of new health products locally. There is an opportunity to not only address local health priorities, but for Ontario companies to become global leaders at developing and exporting new health products. Ontario needs to become an environment where bioscience companies are a pillar of economic growth, a source for employment stability and create favourable returns for investors.

**What happens if we do nothing?** Despite the presence of a few large anchor companies developing pharmaceuticals (primarily generic), pharmaceutical products were still one of Ontario's top five imports in 2010. Government spending on health care (which does not include the full cost for pharmaceutical and health technology consumption, borne by Ontarians) is currently 42% of total program spending. The aging population is a key cost driver as health costs rise significantly after age 65, with the majority of health spending occurring in the last years of life. Ontario's Ministry of Finance projects that by 2030, the senior's share of the population will rise from 13.2% in 2007, to 21.9%. The population of Ontarians over 65 will more than double during that period to 3.7 million. Recognizing that the cost of health care is increasing, the Ontario government has invested heavily in research and development, anticipating that medical technologies will result in improved health and long-term cost savings for the system. However, Ontario's bioscience industry has significantly underperformed in terms of commercially developing and manufacturing bioscience products that address the growing demand for new

health care solutions. With limited local options for novel bioscience products, Ontario must rely on imported pharmaceuticals and other health technologies from other regions.

If we do nothing, Ontario will have lost the opportunity for building a globally recognized bioscience sector that develops and exports new products and services for the leading health priorities globally. Our investments in research and innovation will be lost to other regions that will realize the economic benefits of a growing industry (i.e. revenues, jobs, spin-off ventures, return on investment, and reinvestment of capital).

**Why is it industry's responsibility to act?** Regional governments throughout North America (and globally) have been prioritizing innovation-based economic development for over a decade. The successful regions however are the ones in which industry takes the lead on identifying the strategic priorities and implementing specific actions that drive change. If Ontario is unable to rally stakeholders in the domestic industry, to work together and in partnership with government, then Ontario will be left behind as other regions prosper in the development of their own domestic bioscience sectors.

**Why are we now poised to succeed?** The global economy is still in recovery, two years after the economic downturn. Canada however is projecting the strongest levels of economic growth, well above other developed regions (OECD, 2011). While other countries will likely require tax increases to offset their growing deficit from stimulus spending, Canada and Ontario are in a position to maintain one of the most competitive environments for business in the world.

**What has the Ontario biosciences industry accomplished through OBEST™?** The OBEST™ strategy was launched to stop the downturn in the sector and address the issues that will allow our domestic biosciences sector to reach a point of sustainability, and future prosperity. Over the past several months, we have engaged >200 stakeholders from across the province, dedicating >5000 hours of volunteer time to develop a plan.

The strategy has defined the following **Goals / Objectives** that our industry believes can be achieved by implementing our plan:

- I. **Capital** – Increase capital investments to enable success of Ontario based life science companies;
- II. **Capabilities/People** - Attract, support, develop and retain entrepreneurs and skilled management to achieve increased employment and wages in the sector;
- III. **Innovation Adoption** - Retain value from locally derived IP by increasing exports of bioscience products and services;
- IV. **Anchor Industry** - Build and retain local companies that deliver products and services to a global market;
- V. **Culture** - Promote a cultural mindset that: supports commercial enterprise as an essential partner in improving human health; understands the value that can be derived from failed ventures and applies it to future endeavours; and enables managed and calculated risks to achieve significant rewards; and
- VI. **Integration** - Increase the number and value of partnerships among academia, industry and health care to address priorities in health.

**What are we still planning to do?** Our detailed strategies and implementation plans describe the actions (and projects) that will be undertaken by a variety of stakeholders over the next 3-5 years. These plans will further engage all bioscience stakeholders in the province to implement a roadmap for addressing the key issues in the sector.

**How are stakeholders continuing to get involved?** Of the 9 strategic implementation plans developed through this process, 5 are directly led by industry champions while the other 4 will require ongoing dialogue and partnership with government. OBEST will establish a secretariat to provide central coordination for the industry led plans, and to facilitate engagement of all interested stakeholders throughout the province.

Industry led strategic implementation teams are as follows:

Industry Led Strategies	Goals / Objectives Impacted (described above)					
	I	II	III	IV	V	VI
Education & awareness	X	X	X		X	X
Build and expand pool of investors and partners	X					X
Build interconnectivity among Ont. SMEs		X		X		X
Define industry priorities	X		X	X		X
Encourage “patient” (long-term) capital	X				X	

*For further information of how to become involved in one or more of these teams, please contact the OBEST secretariat.*

**What impact will it have?** The Ontario biosciences sector will become a sustainable contributor to Ontario’s economic growth, generating local jobs and wealth for investors. The biosciences industry in Ontario will become the leading champion for developing and delivering solutions to Ontario’s health priorities, and will be internationally recognized as a region that produces and exports products to address global health priorities.

Together we will create an entrepreneurial environment for success, where the value of setting up a bioscience company and remaining in Ontario is globally recognized.

## **Call to Action**

*This is industry's plan, and industry's mandate.*

Ontario bioscience companies, along with other stakeholders from academia, hospitals, patient-groups, and government, have created this plan from grassroots discussions and consultations across the province. The proposed strategies and implementation plans have not been mandated by any government or external stakeholders, but have come directly from the people who make up Ontario's bioscience industry, as we know it today.

Our collective mandate as bioscience industry stakeholders in Ontario is to ensure that we establish sustainability, growth, and long term prosperity for our sector. The Ontario biosciences sector should be globally recognized as one that: employs highly skilled and talented individuals; generates profitable returns for investors and shareholders; and delivers leading solutions that address the world's health problems.

This strategic implementation plan is not an "ask" to any legislative government or single organization. It is a plan for engaging Ontario's biosciences industry to play an active role in implementing the changes that together we have defined for driving growth in the sector.

This document is an open call to all stakeholders of the Ontario biosciences sector to become engaged in the strategies that will deliver on our collective goals. Only by working together can we achieve a sustainable and prosperous biosciences industry in Ontario.



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## Supplemental Reports

*(These reports are available through the OBIO office)*

- A. **OBEST Strategic Implementation Plans:** A full report on the strategic implementation plans outlines the detailed plans for each of the identified strategies in this report. These plans have been distributed to a team of champions who will continue to engage Ontario biosciences stakeholders in the implementation process. Please contact the OBIO office if you are interested in engaging in the implementation of any one or more of the identified strategies.
- B. **OBEST Full Appendix Report:** A full detailed appendix has been referenced throughout this document, which includes a compilation of information and resources that were available to all OBEST participants throughout the strategic planning process. This report is available for reference through the OBIO office.



## Ontario's Biosciences Industry Strategy

### **PREAMBLE**

The global economic downturn in 2008 impacted all sectors of the economy. Access to capital became extremely difficult, companies struggled to survive, and governments were called upon to re-stimulate growth in the economy. Two years later Ontario has begun to recover, however the province's 2010/11 budget deficit remains at \$16.7 billion compared to a surplus of \$2.3 billion in 2006/07. For Ontario to re-gain economic prosperity it must move beyond its traditional manufacturing roots and commit to developing innovation based sectors. The implementation of a systematic, coordinated bioscience strategy is essential, engaging the full ecosystem of bioscience companies, investors, public policy leaders, universities, researchers, pharmaceutical companies, and other drivers of bioscience innovation. Engagement by all stakeholders will ensure long-term commitment to commercial development and market adoption of technology, benefiting the Ontario economy, and all Ontarians.

Ontario's bioscience industry is underperforming in terms of commercialization receptors and jobs created relative to the massive investment in university research over the last decade. In work conducted by OBIO in 2009, SME companies in Ontario expressed that adequate external financing and working capital was their top priority; many companies reported the need for capital to just stay alive. In 2008/09, Ontario lost more than nine bioscience companies and about the same number of companies were merged or acquired. OBIO members continued to report a trend of declining employment in the sector due to downsizing, mergers, or company closures.

A follow-on assessment by OBIO in 2010 showed that Ontario bioscience CEOs continue to face challenges accessing capital and impediments to accessing both funding and markets. The dominant issue is raising external capital, while securing funding for research, commercialization, and clinical trials are all cited as priority issues. Partnering is also listed as a priority issue, often driven by the need to monetize programs and intellectual property. When asked about 9 Ontario programs to support bioscience companies, most CEOs were knowledgeable about the various sources of fund but very few had received any support. The number one priority requested of OBIO was to develop and implement a strategic plan for building a competitive indigenous bioscience industry in Ontario.

OBIO responded with the creation of OBEST, a forum for the Ontario bioscience ecosystem to engage in a collaborative, iterative process to bring the best ideas forward with which to build a vibrant bioscience cluster with the concomitant creation of jobs, improved health outcomes and prosperity for Ontarians.

*Refer to Summary Appendix for additional highlights on the financial status of Ontario's biosciences sector.*

## OVERVIEW ON STRATEGIC PROCESS

OBEST™ engaged >200 stakeholders from across Ontario in a 6 month strategic planning process, leading to the culmination of a strategic implementation plan for the Ontario biosciences sector.

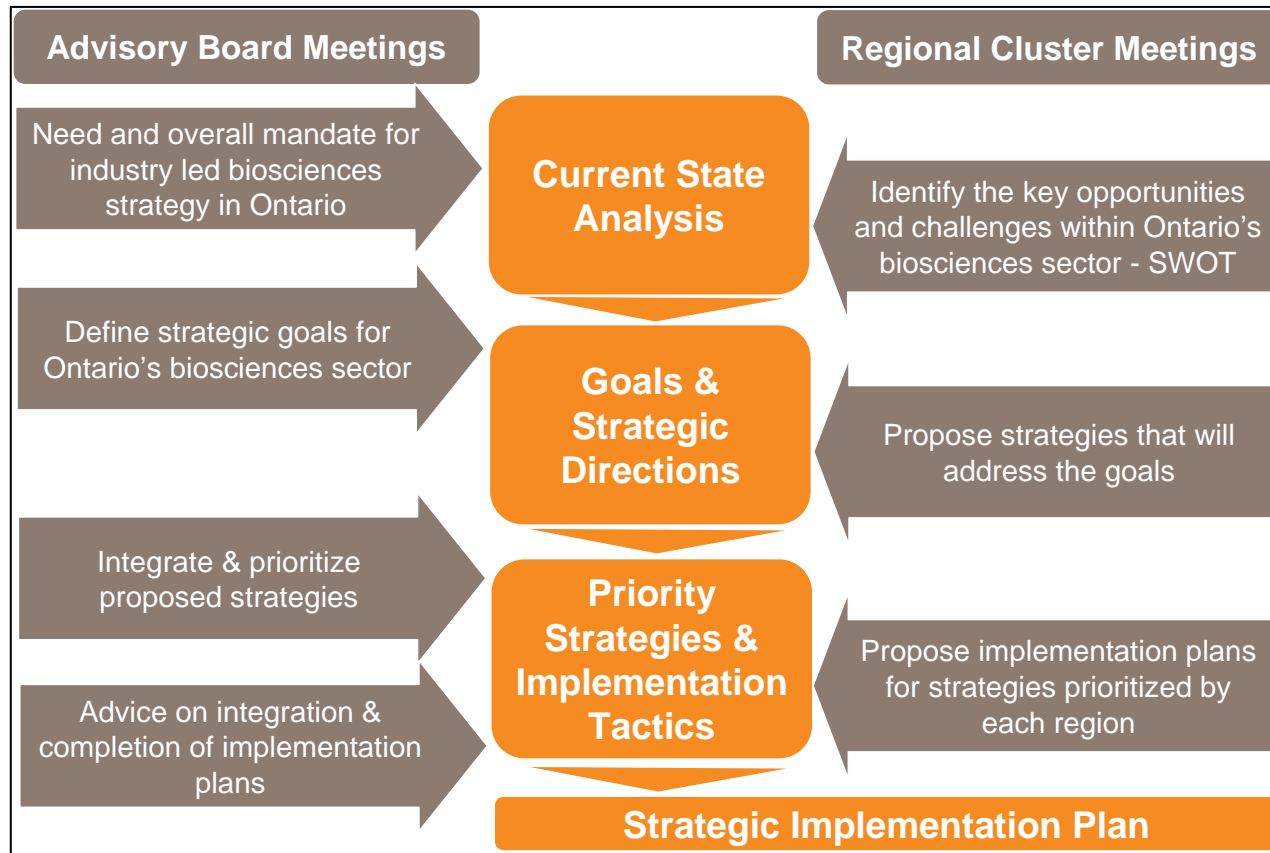
### Breakdown of Stakeholders and Roles

Forum	# of People	Individuals Involved	Role
Advisory Board / Special Advisors	33	C-level pharma / bioscience companies; patient/disease-based organization; academia; advisors; government.	Guidance on prioritizing strategies and tactics arising from regional clusters; integration of common themes and goals.
Task Force	16	Mix of Ontario bioscience organizations, industry, and other volunteers	Support materials for regional discussions; engagement of regional stakeholders.
Regional Clusters (7 Cluster Regions)	>170	Led by CEO's of companies in each cluster. Participating companies and other related bioscience stakeholders.	Identification and discussion around key issues; goals; strategies and tactics. Engagement in development and deployment of implementation plans.

*Recognition to all participants has been included in the Full Appendix.*

The OBEST™ strategic process was designed specifically to engage a broad group of participants in the discussions on how to transform and grow Ontario's bioscience economy. Ideas, priorities, and ultimately tactics proposed were continually evolved, shaped and refined over the course of the iterative process among the Advisory Board and Regional Cluster Group meetings.

The objectives for each meeting were clearly defined, and progress was consistently achieved, advancing the collective ideas into a comprehensive strategic implementation plan. The strategic process and meeting objectives are outlined in the diagram below.



*Additional information on the strategic process is available in the Full Appendix.*

## INDUSTRY PERSPECTIVE ON THE SECTOR – SWOT

A full macroeconomic assessment of Ontario’s biosciences industry was not undertaken as part of the strategic process; however, the perspectives from Ontario’s bioscience industry stakeholders were compiled through regional cluster meetings and from the advisory board. A summary of perspectives from regions across Ontario were used to develop the following SWOT analysis.

### SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Strong academic research base with significant investment in IP generation and research training</li> <li>• Clinical infrastructure and population base that could support commercial development and testing</li> <li>• Focused research priorities (e.g. OICR)</li> <li>• Pipeline of high value, early stage IP and start-up opportunities</li> <li>• Good business environment in ON</li> </ul>	<ul style="list-style-type: none"> <li>• No local large life science MNC’s</li> <li>• Limited cash “ready” to invest; CDN VC’s not investing</li> <li>• Lack of “industry-ready” talent</li> <li>• CDN’s lack proper mind-set required for building a viable industry</li> <li>• Commercialization of academic IP remains a challenge (re: cash, entrepreneurs, culture) – some regions in ON more open than others</li> <li>• Limited mentorship and knowledge sharing (silo mentality)</li> <li>• Negative perception on access to local market (e.g. formulary)</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Ontario represents the largest HMO in North America with \$45B budget with significant purchasing power</li> <li>• Hospitals are seeking opportunities to collaborate with industry</li> <li>• Incentives to investors to decrease risk would improve local investment</li> <li>• CDN brand seen as “trustworthy” and could be leveraged globally</li> <li>• The biosciences sector is a renewable resource and a global market worthy of pursuit</li> <li>• Establish an industry set of metrics</li> <li>• Develop an integrated model for Ont.</li> </ul>	<ul style="list-style-type: none"> <li>• CDN companies negotiate unfavourable deals with foreign partners and investors due to difficulty securing early stage capital</li> <li>• Companies, IP and jobs move to foreign markets at advanced stages of development</li> <li>• ROI is lost to foreign markets (impacts both public and private investments)</li> <li>• ON required to import health products at elevated price</li> <li>• No receptor for investments in training and advanced degrees, results in loss of talent to US or other industries</li> </ul>

The OBEST™ Task Force benchmarked Ontario against other jurisdictions to identify critical success factors for a prosperous biosciences cluster. Key factors included government support and favourable policy environment for sector, local innovation and research (academic and industrial), access to capital, domestic anchor companies, local and international partnerships, and infrastructure.

### Summary of Regional Benchmarking

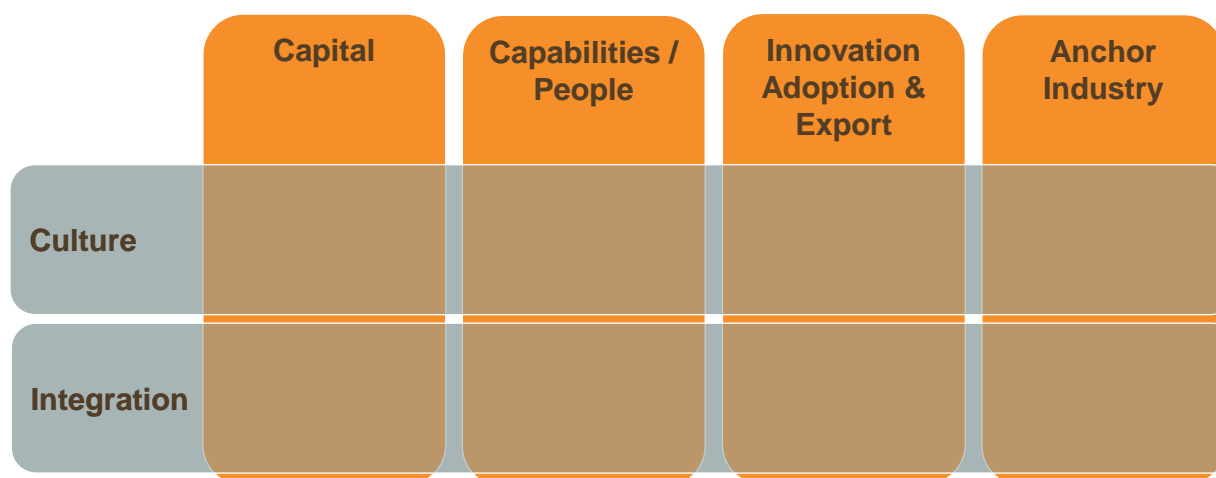
Benchmark Region	Highlights of Critical Success Factor's Identified
Ontario	<ul style="list-style-type: none"> <li>▪ Clinical trial cost advantages and efficiencies</li> <li>▪ Tax incentives (reduce after-tax R&amp;D cost of \$100 to &lt;\$37)</li> <li>▪ Strong academic research base</li> <li>▪ Government initiatives (MaRS, MI, htX, OCE, OGI, OICR)</li> </ul>
British Columbia	<ul style="list-style-type: none"> <li>▪ Superior tax incentives to corporations and highly qualified personnel</li> <li>▪ Focus on and support of fully-integrated anchor companies</li> <li>▪ Investment in catalyzing infrastructure</li> <li>▪ Foster culture of entrepreneurship and innovation in universities (UBC &amp; SFU have spun-off nearly 200 companies)</li> <li>▪ Active collaboration with US and international clusters</li> <li>▪ Supply of capital – LSIF’s driven company growth</li> </ul>
Massachusetts, USA	<ul style="list-style-type: none"> <li>▪ Over 480 bioscience companies; 240 in Boston area</li> <li>▪ Strong research support into world class institutions</li> <li>▪ Local presence of venture capital, managers, service providers</li> <li>▪ Strong entrepreneurial culture</li> <li>▪ “Self feeding cluster” retention and recycling experienced talent</li> </ul>
Minnesota, USA	<ul style="list-style-type: none"> <li>▪ Anchor companies, particularly med-tech</li> <li>▪ Local venture capital and investment banking</li> <li>▪ Local research base</li> </ul>
Victoria, Australia	<ul style="list-style-type: none"> <li>▪ Strong anchor tenants</li> <li>▪ Government investment and support for innovation</li> <li>▪ Government focus on reducing regulatory burden</li> </ul>
Medicon Valley, Denmark / Sweden	<ul style="list-style-type: none"> <li>▪ Clustering of 77% of Danish biotech companies</li> <li>▪ Supportive taxation: tax loss carry forward; R&amp;D spending at 2.72% GDP; tax exemption for researchers and key employees</li> </ul>
South Korea	<ul style="list-style-type: none"> <li>▪ Focus on long-term growth (multi-decade planning)</li> <li>▪ Multiple biopharma companies with domestic revenues</li> <li>▪ Focus domestic growth through in-licensing; external growth through partnership</li> </ul>
Israel	<ul style="list-style-type: none"> <li>▪ National sense of self reliance fuel entrepreneurship / innovation</li> <li>▪ Ranked third in world for venture capital availability (70 funds)</li> <li>▪ Ranked 1<sup>st</sup> for med. device patents; 4<sup>th</sup> for biopharma patents</li> <li>▪ Successful tech transfer and network of incubators</li> </ul>

*Case studies on regional benchmarks for Ontario’s biosciences sector have been included in the Full Appendix.*

### GOALS FOR ACHIEVING A SUSTAINABLE BIOSCIENCES INDUSTRY

A total of 6 strategic goals were identified as factors that needed to be addressed over the next 3-5 years in order to ensure a sustainable biosciences sector in Ontario. Four goals: Capital; Capabilities / People; Innovation Adoption & Export; and Anchor Industry were considered as distinct and relatively independent, while the remaining two goals: Culture, and Integration, essentially “cut across” the first four goals. See diagram below.

### Strategic Goals for a Sustainable Biosciences Industry in Ontario



Each of the identified goals was further defined by what the industry sought to achieve in Ontario over the next 3-5 years.

Strategic Goal	Objective for Ontario Biosciences Industry (3-5 years)
I) Capital	Increase capital investments to enable success of Ontario based life science companies.
II) Capabilities / People	Attract, support, develop, and retain entrepreneurs and skilled personnel to deliver innovation and achieve consistent growth of high value jobs in the sector.
III) Innovation Adoption & Export	Increasing sales of bioscience products and services.
IV) Anchor Industry	Build and retain local companies that provide employment stability and spin-off ventures.

Strategic Goal	Objective for Ontario Biosciences Industry (3-5 years)
V) Culture	Promote and encourage a culture of industry leadership and engage a cultural mindset that: <ul style="list-style-type: none"> <li>• Supports commercial enterprise as an essential partner in improving human health;</li> <li>• Celebrates successful ventures and understands the value that can be derived from failed ventures and applies both to future endeavours; and</li> <li>• Enables managed and calculated risks to achieve significant rewards.</li> </ul>
VI) Integration	Value, trust, and leverage the combined expertise and resources that academia, industry and healthcare bring to the table and create novel partnerships that increase the speed of IP transfer and development of innovative products and services.

## PRIORITY STRATEGIES

The regional cluster groups each worked on identifying potential strategies to achieve the previously defined goals for the sector. From these discussions, a total of 28 different strategies were proposed by the regional cluster groups. Each of the strategies addressed a minimum of one goal, but most often addressed several of the 6 strategic goals. The advisory board was then engaged to select the most relevant strategies to be implemented. This selection was achieved through an open democratic process, where individuals could first debate the merits of each strategy, and then openly vote on the best strategies to be prioritized for implementation.

This process narrowed the proposed strategies from 28 down to 9 that would then be proposed back to the regions for final validation and implementation planning. Of the 9 strategies selected by the advisory board, 5 of them were strategies that could be directly implemented by stakeholders in the Ontario bioscience industry. The 4 remaining strategies were ones that would require partnership with either the provincial or federal government.

Priority Strategies	Goals / Objectives Impacted (described above)					
	I	II	III	IV	V	VI
<b>Industry Led Strategies</b>						
1) Education & awareness	X	X	X		X	X
2) Build and expand pool of investors and partners	X					X
3) Build interconnectivity among Ontario SMEs		X		X		X
4) Define industry priorities	X		X	X		X
5) Encourage “patient” (long-term) capital	X				X	
<b>Government Partnered Strategies</b>						
6) Identify and invest in provincial health priorities		X	X			X
7) Ensure and clearly demonstrate integrity of process	X				X	
8) Use provincial purchasing power to drive market	X		X		X	X
9) Modification of government incentives for industry	X			X		

*See Full Appendix for details on the 28 strategies proposed and the work book used by the advisory to select the best priorities to propose back to the regions. See additional details in the Full Appendix on guidelines given to the regions to develop implementation plans for the priority strategies.*



**Strategies to be Implemented by Industry in Partnership with other Stakeholders (Investors, Academia):** The following 5 strategies were proposed by the regional clusters, democratically prioritized by the advisory board, and represented to the various stakeholders in the cluster regions for final validation, and implementation. The priority strategies are as follows:

1. **Education & Awareness** – Educate and build awareness of the Ontario biosciences sector with clear and consistent messages in the following focus areas: entrepreneurial education; industrial education; awareness of the value of innovation
2. **Build & Expand the Pool of Investors and Partners** – Build stronger connections with existing networks of investors and partners that are not currently engaged with the Ontario biosciences sector.
3. **Build Interconnectivity Among Ontario SME’s** – Co-ordinate a sharing of knowledge and resources among Ontario SME’s and other partners, through web-based mediums and leadership forums / roundtables.
4. **Define Industry Priorities** – Create a cohesive industry strategy, leveraging successes, in order to sustainably address marketplace demands and create global recognition within the bioscience community. This will be done by defining the customer and market demands (payer, provider, patients, OEMs) that map against Ontario biosciences strengths and work collectively (government, academia, industry and investors) to fund and develop solutions to address these needs.
5. **Encourage “Patient” (Long-Term) Capital** – Work with investors, government and other stakeholders to incentivize long term investment in Ontario human health bioscience companies to build a sustainable domestic industry.

**Strategies to be Implemented in Partnership with Government:** The following 4 strategies were also proposed by the regional clusters and then democratically prioritized by the advisory board. However, these strategies, while equally important, require direct engagement with government for implementation. Success of these strategies will require dialogue with government on policy and programs that will enhance the overall environment for the biosciences industry in Ontario and Canada. OBIO and its membership will lead the dialogue with government on behalf of industry (as well as work with others who are engaging government in similar strategy discussions), for the following priority strategies:

6. **Identify and Invest in Provincial Health Priorities** – Work with governments and research institutes to identify opportunities to address health priorities for Ontario/Canada that can lead to export of technology and local job creation.
7. **Ensure and Clearly Demonstrate Integrity of Process** – Engage in discussions with government on integrity of process to ensure that decisions affecting the industry are inclusive, fair and transparent.
8. **Use Provincial Purchasing Power to Drive Market** – Work with government to communicate the value (health and economic) of the biosciences sector to Ontario, and develop policies, solutions and partnering to achieve sustainability and better health outcomes.
9. **Modification of Government Incentives for Industry** – Work with governments to rapidly access and deploy existing funds. Our industry is looking to modify existing policies that will ensure Ontario’s competitiveness globally, and will attract non-government funding to the sector.

## IMPLEMENTATION TACTICS

Implementation of the proposed strategies is dependent on the two categories outlined above.

**Industry Championed Implementation:** The regional clusters were each asked to develop implementation tactics for 1 to 3 of the 5 prioritized strategies for industry implementation. Across the 7 regions, all 5 of the prioritized strategies were validated, and had specific tactics proposed for implementation. A planning team for each strategy was then established to integrate the various tactics into a single implementation plan. The detailed plans are available as a separate report.

**Government Partnered Implementation:** The strategies that are dependent on a partnership with government to implement were presented and validated by the regional cluster groups. A planning team for each strategy was also established to fully develop a clear value proposition that could be presented to government. These plans outline the bioscience industry’s perspective on how policy changes can help to achieve the stated goals for a sustainable and prosperous biosciences sector in Ontario. As the discussions with government are ongoing, these plans have not been included. OBIO is providing leadership for these strategies on behalf of the biosciences sector, and continues to engage bioscience companies and other stakeholders to contribute to these discussions.

Work plan	2011				2012		2013		2014		2015	
	Q1	Q2	Q3	Q4	H1	H2	H1	H2	H1	H2	H1	H2
<b>Development of Project Plans</b>												
Teams to further develop plans	■	■										
Other participants recruited		■	■									
Funding / partners further defined		■	■									
<b>Engagement</b>												
Build support across Ontario	■	■										
Official launch			■									
Communications / dissemination			■	■	■							
<b>Ongoing Assessment</b>												
Annual OBIO survey				■		■		■		■		■
OBEST Advisory Board	■	■	■	■	■	■		■		■		■
Interim review and revision								■	■			
<b>Present Impact Success Stories</b>												
Education & awareness						■		■		■		■
Build / expand investors/partners								■		■		■
Interconnectivity among SME’s								■		■		■
Define industry priorities					■							
“Patient” (long-term) capital												■

The full work plan outlines the role out of various projects over the next 3-5 years, with an initial focus on near-term impacts, while also putting in place teams and funding for long-term success.

## Ongoing Engagement / Deployment

### Our Achievements to Date

The success of the OBEST strategic process is accredited to the leadership and tremendous commitment from >200 stakeholders across the province, who all share a common vision for achieving a sustainable and prosperous bioeconomy in Ontario.

The contributions of volunteer time as well as both cash and in-kind investments have demonstrated that by working together we can achieve great things and maintain lasting impacts. The combined value of our contributions to the OBEST process to date includes:

- Over 5000 volunteer hours contributed over the course of 6 months
- >\$100,000 additional in-kind contributions
- >\$80,000 cash for operating, consulting, travel, communications, other expenses

### From Ideas to Action

OBEST has outlined a roadmap for engaging Ontario bioscience stakeholders in the specific actions that address the critical issues in Ontario's bioeconomy. The successful deployment of these actions will be achieved with the following supportive factors:

1. **Funding** – Dedicated funding for ongoing project management and for specific projects described in the implementation plan is critical. OBEST is coordinating discussions among our many partners who may contribute to these activities. Overall success however will depend on engaging industry partners in funding the implementation. This plan is “industry driven” and therefore must also include industry funding. OBIO is working with its members on attracting funding to the implementation.
2. **Central Coordination** – An OBEST Secretariat will be established to project manage and coordinate the various activities as outlined in the Industry Championed Implementation Plans. The secretariat will act as the central point of contact for industry and other partners wishing to actively participate in implementation of the strategies. Communications, information management, and ongoing reassessment of metrics will be coordinated through this office.
3. **Regional Collaboration** – The strategic process was focused on the engagement of stakeholders through 7 regional clusters throughout the province. The resulting goals and strategies however are representative of the priorities identified by all regions. The implementation plans and projects have eroded the former structure of regional engagement, and have engaged various stakeholders from across the province who are interested in participating in the implementation of specific plans and defined projects. Competitiveness among regions has not

been a factor throughout this process, with participants recognizing the value of working together for the benefit of the entire provincial biosciences sector.

4. *Engagement of All Stakeholders in Ontario* – Implementation of the proposed strategies is the mandate of the entire biosciences sector in Ontario. All stakeholders, especially those who have not yet been a part of the OBEST process, are encouraged to support and directly engage in the implementation of the strategies.

### **Our Shared Legacy**

This plan was developed by the Ontario biosciences industry, and it is the industry that must take ownership in the plan and continue to advance it. The results will be our shared legacy.

The legacy of OBEST will be a strategic plan for Ontario that over the 3-5 years, built an indigenous, sustainable, private sector, bioscience industry capable of competing worldwide to attract and retain financial investment and create jobs, wealth, and healthcare solutions.

## Appendix – Short Version

### OBEST LEADERSHIP TEAM

#### OBEST

Director General: Gail Garland, President & CEO OBIO  
Chair OBEST Advisory Board: Dr. Daniel Billen, President Amgen  
Chair OBEST Task Force: Sean Thompson, CEO 16 Mile Laboratories  
Vice Chair OBEST Task Force: Jeff Coull, CEO Chlorion Pharmaceuticals

#### OBEST Regional Leadership

GTA Central: Tom Wellner, CEO Therapure  
GTA North: Gailina Liew, CEO GeneNews  
GTA West: Niclas Stiernholm, CEO Trillium Therapeutics  
South Central Ontario: Lisa Crossley, CEO Quantum Dental Technologies  
Western Ontario: Dr. Wayne Danter, CEO Critical Outcome Technologies  
Eastern Ontario: Stephen Fanjoy, Past President, Therapeutic Monitoring Systems  
Northern Ontario: Stefan Larson, CEO Tornado Medical

#### OBEST Advisory Board Attendees

Adalsteinn Brown, ADM MRI (former)  
Art Slutsky, VP Research St. Mikes Hospital  
Danielle Peters, The Rothwell Group  
David Sculthorpe, CEO Heart and Stroke Ontario  
Dr. Brent Norton, CEO PreMD  
Dr. David Young, Managing Partner Actium Equity Partners  
Dr. Kellie Leitch, Associate Professor, University of Toronto  
Gio Vatteri, National Health Practice Leader, IBM  
Gord Surgeoner, CEO Ontario AgriFoods Technologies  
Helen Findlay, Managing Partner Actium Equity Partners  
James Milway, Executive Director, Institute for Competitiveness and Prosperity  
James Parsons, CFO Amorfix  
Jason Field, Senior Manager, MEDT  
John Goudey, Partner, E&Y (retired)  
Lynda Covello, President, LPC Consulting International

Martha Black, Campbell Strategies  
Michael Power, President Thunder Bay Regional Research Institute  
Richard Prial, Director, MOHLTC  
Steve Barnes, Senior Policy Advisor, MRI  
Terry Cairns, CIO Canadian Blood Services  
Terry Donaghue, Director, Technology Transfer & Industry Liaison, Mount Sinai Hospital  
Ulrich Krull, Professor Master of Biotechnology Program, University of Toronto  
Steve Ottaway, Managing Director, GMP Securities  
Jean-Jacques Rousseau, Manager (A), Life Science Program, MRI  
Robert Merson, Management Consultant, Merson Consulting Inc.

**OBEST Task Force Members**

Adam Buckley, Variation Biotechnologies  
Andy Haigh, Lumira Capital  
Bettina Klenkler, Ontario Centers of Excellence  
Dave Manku  
Elizabeth Munro, Ontario Centers of Excellence  
Frederic Sweeney, Tornado Medical  
Gary Kasper  
Keith Jarvie, Averted Vision Consulting  
Lee Smithson, Stiller Center  
Mark Steedman, Interfacebiologics  
Parimal Nathwani, MaRS Innovation  
Rahul Sarugaser, Center for Commercialization of Regenerative Medicine  
Robert Browne, Viron Inc.  
Sam Lee, Toronto Region Research Alliance

## LIST OF SUPPORT DOCUMENTS / REFERENCE MATERIALS

### **OBEST™ Source Documentation**

- OBEST™ Task Force meeting minutes
- Advisory Board working documents and meeting minutes (4 meetings)
- Regional Cluster working documents and meeting minutes (3 regions, 3 meetings each)

### **Background and Benchmarking Reports**

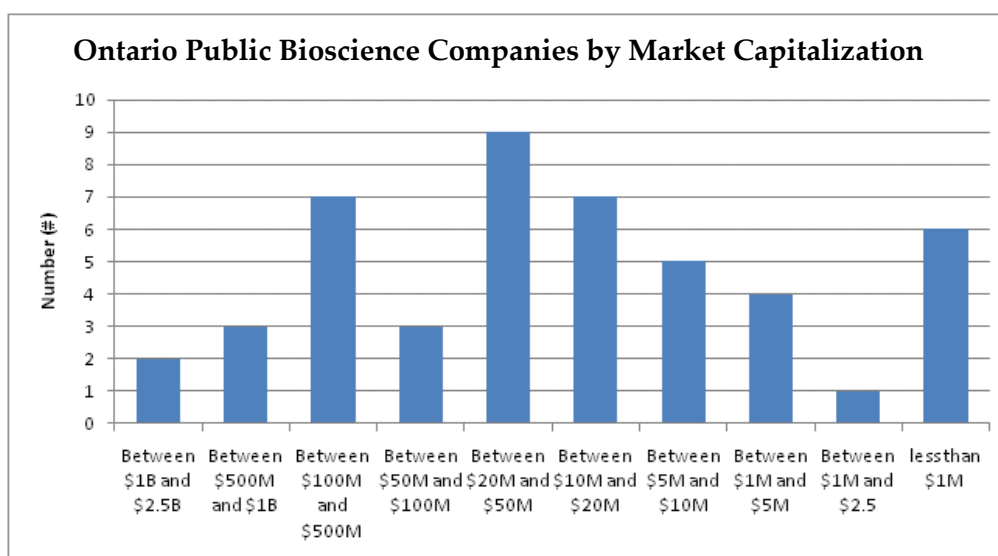
- OBIO Members Consultation Report 2010
- PriceWaterhouseCoopers Canadian Life Sciences Report 2011
- NASA Life Sciences Technology Transfer Report
- Georgia Life Sciences Industry Analysis 2009
- Life Sciences Industry in Michigan 2009
- The Competencies of Regions, Canada Cluster Study
- New York Bioscience Economic Impact Study
- Milken Institute Report on the Florida Life Sciences Sector
- Massachusetts Biomedical Initiatives 2008
- Brookings Institute Report on Biotech Centres in the US.
- Washington Bioscience Economic Analysis 2002
- Tennessee Biotechnology Assessment 2003
- Oregon Bioscience Report 2009
- Milken Institute Report on Philadelphia Cluster
- PriceWaterhouseCoopers Biotech Reinvented
- E&Y Report on Global Biotechnology 2010
- BIOTECanada - Beyond Moose and Mountains
- MRI - Ontario Life Sciences Strategy 2010
- Porter Report on the San Diego Cluster
- TRRA Report on Toronto's Biotech History
- Provincial R&D Activities 2010
- Monitor Report on China The Life Sciences Leader of 2020



## HIGHLIGHTS FOR THE FINANCIAL STATUS OF ONTARIO'S BIOSCIENCES SECTOR

### Corporate Demographics:

- Number of bioscience companies:
  - Public: 47 <sup>1</sup>
  - Private: 93 (private companies financed since 2005)<sup>2</sup>



- Number of bioscience employees:
  - Total: > 20,500 pharmaceutical and biotechnology.<sup>3</sup>  
(Note: The Ontario government number includes employees of US pharma subsidiaries engaged primarily in sales and marketing, clinical trials (including post-marketing trials), and government relations.)

### Cluster Membership:

- Established bioscience companies (>500 employees):<sup>4</sup>
  - Predominantly pharmaceutical including Apotex, AstraZeneca, Baxter, Bayer, Eli Lilly & Co., Sanofi Pasteur. (Note that most companies are subsidiaries of foreign multinationals.)
- Early stage bioscience companies (<500 employees):
  - Over 100 companies include early-stage innovative firms and numerous independent consulting firms.<sup>5</sup>

<sup>1</sup> TSX Group

<sup>2</sup> TechFinance <http://www.techfinance.ca/>

<sup>3</sup> Canadian Life Sciences Database (<http://www.canadianlifesciences.com/ca/db/index.php>)

<sup>4</sup> <http://www.mri.gov.on.ca/english/documents/Life%20Science%20Strategy.pdf>

<sup>5</sup> TechFinance <http://www.techfinance.ca/>

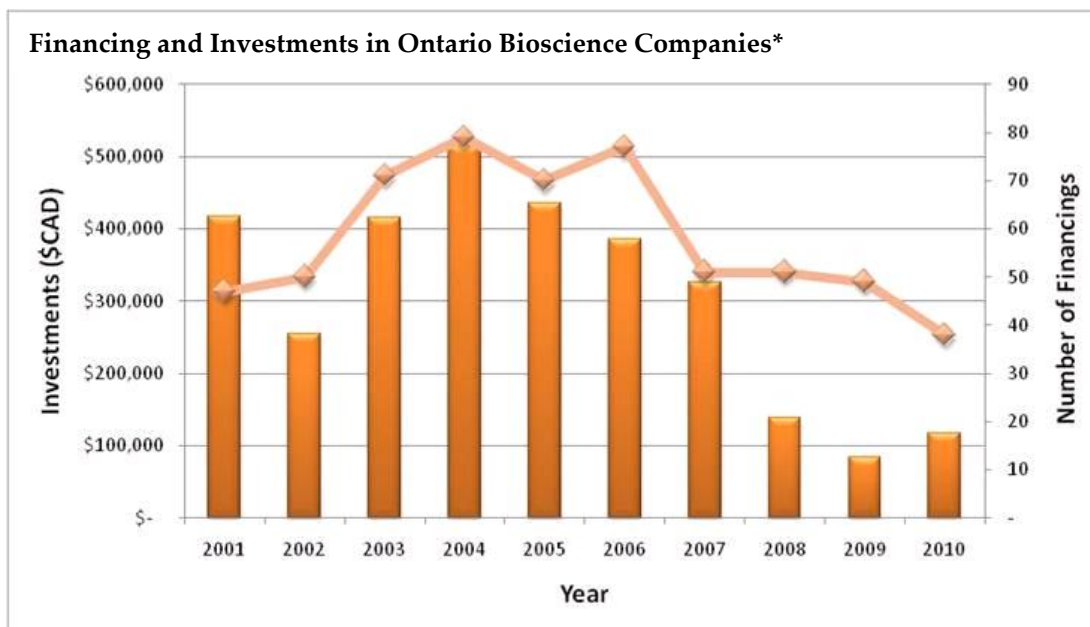
**Key Areas of Focus:<sup>6</sup>**

Biopharma Services	2.76%
Biotechnology, Biopharmaceuticals	44.83%
Genomics, Proteomics, Bioinformatics	6.90%
Health Care	10.34%
Medical Devices	20.69%
Medical Software	9.66%
Nanotech - Bio/Med	0.69%
Other Med/Health Care	4.14%

**Total Life Science Sector Financing in Ontario (2005-Q2 2010):<sup>7</sup>**

- Private: \$703,253,000
- Public:
  - IPOs \$270,225,000
  - Follow-on and other offerings \$1,492,878,000

The total sector is inclusive of pharma services, healthcare, software. If we focus only on the “bioscience” companies (i.e. biotech, biopharma, genomics, proteomics, medical devices), the investment levels are about \$1B less (2005-Q2 2010). The decline from the 2008 recession became a key focus for the goals identified through the OBEST process.



Note: investments are in thousands; Q2 numbers only for 2010

\*Bioscience companies (limited to biotech, biopharma, genomics, proteomics, medical devices).

<sup>6</sup> TechFinance <http://www.techfinance.ca/>

<sup>7</sup> TechFinance <http://www.techfinance.ca/>



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